

REMARKS

To further prosecution of the present application, Applicants have cancelled herein Claims 1-8 without abandonment of subject matter and without prejudice to Applicants' rights to reintroduce deleted subject matter or to seek protection of that subject matter in one or more additional divisional or continuation applications.

In addition, Applicants have added herein new Claims 9-19 which do not introduce subject matter and have antecedent basis in the application specification.

Claims 9-19 therefore are pending in the present application with Claims 9 and 19 being in independent form.

Applicants respectfully request reconsideration.

Rejection of Claims 1-8 Pursuant to 35 U.S.C. § 102(b) and § 103(a)

Claims 1-8 have been rejected pursuant to 35 U.S.C. § 102(b) as anticipated by WO 96/23024 filed by Kroesbergen ("Kroesbergen") or U.S. 4,466,151 issued to Barch et al. ("Barch") or U.S. 4,810,576 issued to Gaa et al. ("Gaa"). In addition, Claims 1-8 have been rejected pursuant to 35 U.S.C. § 103(a) in view of the cited prior art references. The Office Action indicates that even if the prior art references do not meet the requirements of §102(b), it would have been obvious to one of ordinary skill in the art to arrive at the claimed method because the inventive subject matter appears within the generic disclosure of the prior art references.

Applicants respectfully traverse the rejections of Claims 1-8 pursuant to § 102(b) and § 103(a), and respectfully submit that new Claims 9-19 are patentable over the cited prior art references for the reasons given below.

The Examiner rejected Claims 1-8 as being anticipated by Kroesbergen because Kroesbergen discloses forming superabsorbent coatings from compositions comprising an aqueous solution of sodium polyacrylate (superabsorbent polymer), polyurethane (binder) and a solution of polyacrylamide (viscosity modifier). and therefore meets the requirements of 35 U.S.C. § 102(b). Applicants respectfully disagree.

Applicants respectfully submit that Kroesbergen does not teach each and every element of Claims 9 and 19, nor does Kroesbergen provide a teaching or suggestion of the method recited in each of Claims 9 and 19. Kroesbergen discloses a superabsorbent coating formed by "causing suitable monomers to polymerize in the presence of a catalyst in order to obtain a polymer solution, adding a cross-linking agent to obtain a pasty composition, subsequently applying the composition on or in a substrate . . ." (page 2, lines 9-13). In an alternative embodiment,

Kroesbergen discloses preparing a polymer solution “by dissolving already formed polymers in water or an aqueous solvent and only then adding the cross-linking agent. The thus obtained composition can then be applied to a suitable substrate.” (page 2, lines 18-21). In view of these teachings, Kroesbergen discloses a method that preferably produces “a pasty composition” that is applied to a surface using, for instance, a template. Kroesbergen discusses changing the viscosity of the composition with respect to particular methods of applying the composition to a substrate. “In screen printing techniques it may be desired in particular cases for the applied quantity of material not to run out or only to run out slowly. The spreading speed can be influenced by increasing the viscosity.” (page 3, lines 18-22).

In contrast, the method of Claim 9 or Claim 19 is directed to forming a superabsorbent, water-resistant coating on a substrate where the method comprises preparing a *liquid coating composition*. Such liquid coating composition is applied to a substrate using such techniques as passing articles through a resin bath, spraying, flooding or by any other means that permits the liquid coating to contact the article surface and to ensure an even and adequate distribution of the coating. Preparing the liquid coating composition and applying the liquid coating to at least a portion of a surface of an article contrasts with the teachings of Kroesbergen with respect to formation of a pasty composition.

In addition, the liquid coating composition of Claim 9 or 19 includes a *non-particulate viscosity modifying agent provided in the form of an aqueous solution or dispersion* added to the composition to create a spreading consistency that will provide good flow ability and will enable adequate coating. The claimed liquid coating composition is in contrast to the teachings of Kroesbergen with respect to adding certain additives to the composition to change its viscosity such that the spreading speed is affected, e.g., slowed down.

Such additives Kroesbergen discloses includes acrylates, polyurethanes or combinations thereof to alter viscosity; however, Kroesbergen does not disclose *preparing a liquid coating composition . . . comprising a non-particulate viscosity modifying agent provided in the form of an aqueous solution or dispersion*. The method of Claim 9 or Claim 19 is directed to avoiding use of “insoluble powdered” compounds and, in particular, particulate or powdered viscosity modifying agents in order to form a coating from *an aqueous solution having substantially no particulate components*. With substantially no particulate components, the aqueous solution can produce a relatively uniform coating that facilitates protection and water absorbing properties. Also, using a non-particulate viscosity modifying agent in an aqueous solution or dispersion enables the agent to be easily incorporated into the *liquid coating composition*, helps to produce a coating composition *having substantially no particulate components*, creates a spreading

consistency to help to enable adequate coating or coverage, provides good flowing ability to help to form a uniform coating and to help to prevent clogging of coating equipment. (page 6, lines 9-11; page 7, lines 12-14; page 10, lines 14-17). The non-particulate viscosity modifying agent provided in the form of an aqueous solution or dispersion is used toward achieving at least one object of the method according to the invention including forming a coating composition "thick enough that it can adequately coat the article in one pass through the coating apparatus," while maintaining the above-noted properties. (page 6, lines 6-12).

Further, Kroesbergen discloses use of a cross linking agent in order to cross link the polymerized polymer(s) to form a coating paste. In contrast, the method of Claim 9 or Claim 19 recites *heating the article to cure the superabsorbent polyacrylate polymer precursor by cross-linking to form the superabsorbent, water-resistant coating*.

Kroesbergen thus does not teach each and every element of Claim 9 or of Claim 19 and therefore cannot anticipate either Claim 9 or 19. In addition, Kroesbergen does not provide any teaching or suggestion of at least *a liquid coating composition including an aqueous solution having substantially no particulate components comprising a non-particulate viscosity modifying agent provided in the form of an aqueous solution or dispersion*. Claim 9 and Claim 19 therefore are not obvious in view of Kroesbergen.

With respect to Barch, the Examiner rejected Claims 1-8 as being anticipated by Barch because Barch discloses a coating composition comprising an aqueous solution comprising polyacrylate (superabsorbent polymer), polyacrylamide (viscosity modifier) polyurethane (binder) and a lubricant. Applicants respectfully submit that Barch does not teach each and every element of the method recited in Claim 9 or in Claim 19, nor does Barch provide a teaching or suggestion of either of the claimed methods.

Barch discloses a sizing composition for coating surfaces of glass fibers used in reinforcement applications. The composition includes an aqueous solution of a carrier (water), a film-forming polymer and a coupling agent that may include polyacrylates. While polyacrylates are disclosed by Barch as film formers, Barch fails to disclose *a liquid coating composition including an aqueous solution having substantially no particulate components comprising a water-soluble, superabsorbent polyacrylate polymer precursor in aqueous solution*. In addition, Barch fails to disclose *applying the water-soluble, superabsorbent polyacrylate polymer precursor in aqueous solution* to a surface of an article because such a component of the Barch sizing composition would, when cured, attract water to the glass fibers. The Examiner points out in the Office Action that while Barch may not explicitly recite the superabsorbent properties of

the polyacrylate coating that it is reasonable the articles produced in Barch would possess such properties. Such water absorbing properties would be highly undesirable in the reinforcement applications in which the sized glass fibers are used. Therefore, Applicants respectfully submit such water-absorbing properties are not implicit in the teachings of Barch.

In addition, Barch fails to disclose *a non-particulate viscosity modifying agent provided in the form of an aqueous solution or dispersion* as a component of a liquid coating composition.

Thus, for at least the reasons given above, Barch does not disclose each and every element of Claim 9 or Claim 19 and therefore does not anticipate Claim 9 or Claim 19.

Further, Barch does not provide a teaching or suggestion such that it would have been obvious to one of ordinary skill in the art to practice the method of Claim 9 or Claim 19 including preparing a liquid coating composition including *a water-soluble, superabsorbent polyacrylate polymer precursor in aqueous solution* and *a non-particulate viscosity modifying agent provided in the form of an aqueous solution or dispersion*. Claim 9 and Claim 19 therefore are not obvious and unpatentable over Barch.

With respect to Gaa, the Examiner rejected Claims 1-8 as being anticipated by Gaa because Gaa discloses a coating composition comprising an aqueous solution of a neutralized polyacrylate (superabsorbent polymer), polymeric agents (viscosity modifier) such as polyacrylamide, lubricants and film forming polymer (binder). Applicants respectfully submit that Gaa does not teach each and every element of the method recited in either Claim 9 or in Claim 19, nor does Gaa provide a teaching or suggestion of such claimed methods.

Gaa discloses an aqueous sizing composition for glass fibers chopped into strands to make glass fiber paper. The sizing composition includes, *inter alia*, a water-soluble polymer such as polyacrylate resin neutralized with a base. Gaa however does not disclose water absorption as a feature of the polyacrylate resin, which is a common coating used to size glass fibers. In addition, Gaa further discloses the sized glass fibers are used to form non-woven mats that serve as roofing shingles.

Applicants respectfully submit that Gaa does not teach each and every element of Claim 9 or Claim 19, and, in particular, does not disclose *preparing a liquid coating composition including an aqueous solution having substantially no particulate components comprising a water-soluble, superabsorbent polyacrylate polymer precursor in aqueous solution* and *a non-particulate viscosity modifying agent provided in the form of an aqueous solution or dispersion*.

In addition, Applicants respectfully submit that although Gaa does not explicitly disclose the claimed superabsorbent properties of the polyacrylate resin coating, the applications in which

the sized glass fibers are used, namely, nonwoven mats used for roofing shingles would not require such water-absorbing properties. In particular, in applications in which the nonwoven mats are used a roofing shingles, such properties are highly undesirable and detrimental to such applications.

Further, Gaa does not provide any teaching or suggestion that would motivate one of ordinary skill in the art to coat an article according to the method of Claim 9 or the method of Claim 19; and, more specifically, to apply *a liquid coating composition* to glass fibers that includes *an aqueous solution having substantially no particulate components comprising a water-soluble, superabsorbent polyacrylate polymer precursor in aqueous solution and a non-particulate viscosity modifying agent provided in the form of an aqueous solution or dispersion*

Thus, Gaa neither anticipates Claim 9 or Claim 19, nor renders obvious Claim 9 or Claim 19 in view of its teachings.

Based upon the foregoing amendments and discussion, Claims 9-19 are believed to be in condition for allowance, and an action to this effect is respectfully requested. Should the Examiner have any questions concerning this response, he is invited to telephone the undersigned.

Respectfully submitted,



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